# *ALLIUM SHEVOCKII* (ALLIACEAE), A NEW SPECIES FROM THE CREST OF THE SOUTHERN SIERRA NEVADA, CALIFORNIA

DALE W. MCNEAL
Department of Biological Sciences,
University of the Pacific,
Stockton, CA 95211

ABSTRACT

**Allium shevockii**, a new species from the crest of the southern Sierra Nevada on the Kern Plateau in Kern County, California is described and illustrated. The new species shows morphological similarities to *A. atrorubens, A. fimbriatum,* and *A. monticola* in the *A. sanbornii* alliance. It differs from these species in its obovate to oblanceolate perianth segments that are distinctly reflexed distally, and its long thread-like rhizomes that terminate in bulblets in addition to those produced at the base of the parent bulb.

A new species of *Allium* was discovered by James R. Shevock during floristic work in botanically unexplored and remote areas of the southern Sierra Nevada. Populations of this species are scattered over a relatively limited geographical area on Spanish Needle Peak along the crest of the southern Sierra Nevada. Due to the rugged nature of the habitat and limited access to this area, the full range of this new taxon can only be surmised. Review of *Allium* in major U.S. herbaria (CAS, DAV, DS, GH, JEPS, MO, NY, POM, RSA, UC, US, WS) failed to locate additional collections of it.

**Allium shevockii** McNeal, sp. nov.

Tunica exterior bulbi brunnea, reticulatione cellulari carens, tunice interiores luteolae, in sicco rubescentes; bulbi facientes rhizomata filiformia 3–10 cm longa facientia bulbos terminales vel facientes 1–2 bulbillos basales parientes rhizomata filiformia. Scapus (7–)10–20(–29) cm longus. Folium singulum, teres, 15–33 cm longa. Umbella 12–30 vel pluribus floribus. Segmenta perianthii alba ad pallide viridia infra, marronina in triente superiore; segmenta exteriora 12–14 mm longa et 4.5–6 mm lata, erecta, obovata ad oblanceolata, acuta ad mucronata, marginibus irregulariter et non profunde dentatis, reflexa et crispa ad apicem; segmenta interiora 11–13 mm longa et 4–4.5 mm lata, ovata, acuta, marginibus integris, latescentia ad apicem; stylus trilobus; ovarium manifeste cristatum 6 anguste triangularibus processibus, margines exteriores processuum undulatae ad non profunde et irregulariter dentatas (Fig. 1).

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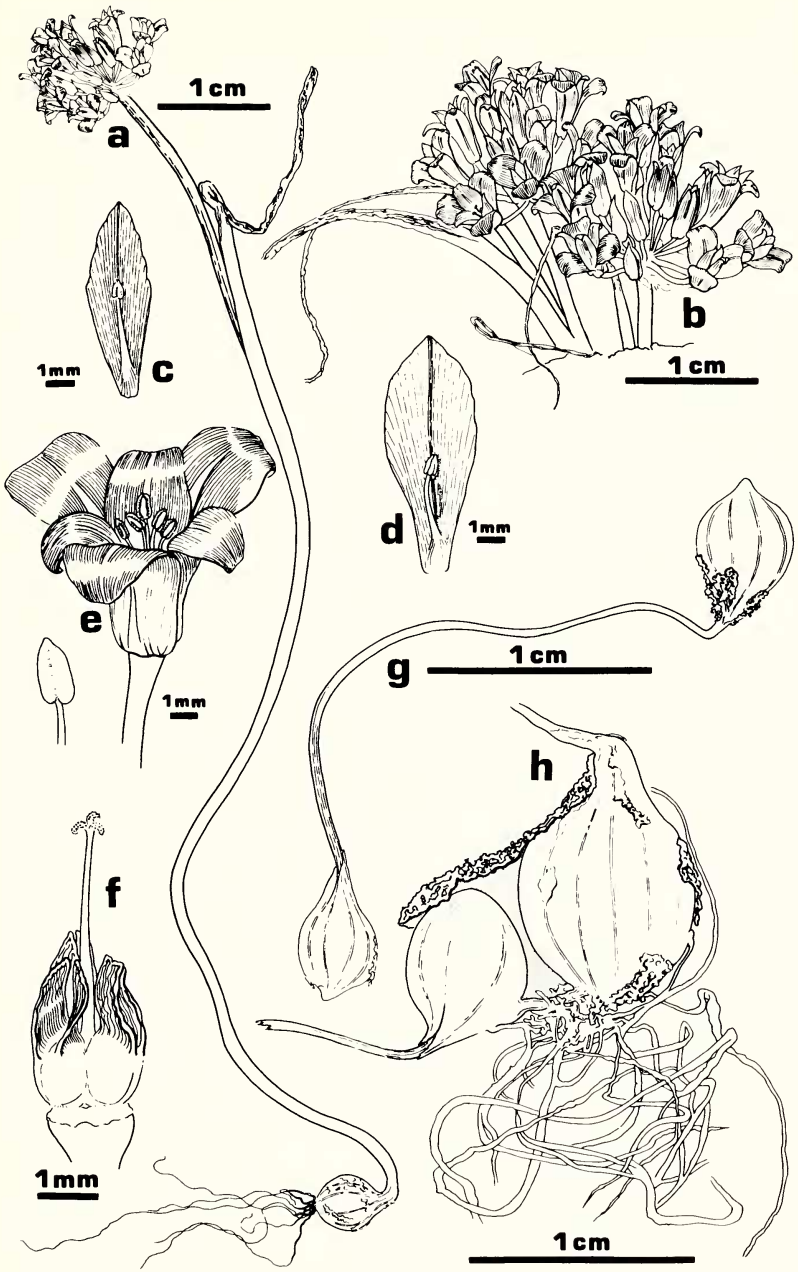


FIG. 1. *Allium shevockii* McNeal. a. Entire plant. b. Habit. c. Inner perianth segment. d. Outer perianth segment. e. Flower with anther. f. Ovary with prominent crests. g. Bulblet with rhizome and new bulb at tip (the lower bulb is the new one). h. Bulb with stipitate bulblet that has developed a rhizome. Drawn from *Shevock 11219* and 35 mm transparencies.

Bulbs subglobose, 10–15 mm long, outer bulb coat brown, lacking cellular reticulation, inner coats light yellow, turning reddish on drying, with obscure ± quadrate cellular markings; bulbs forming thread-like rhizomes 3–10 cm long that develop terminal bulblets or forming 1 or 2 basal bulblets that produce thread-like rhizomes. Scape terete, succulent, fragile when fresh, (7–)10–20(–29) cm long; leaf one, terete, 15–33 mm long. Umbels 12–30 or more flowered; bracts usually 3 (rarely 2), 16–20 mm long, 5–8 mm wide, lanceolate, apiculate; pedicels 10–16 mm long. Outer perianth segments 12–14 mm long and 4.5–6 mm wide, erect, oblanceolate, acute to mucronate with irregularly shallow toothed margins, white to light green below, maroon on the reflexed, curled distal one-half; inner segments 11–13 mm long and 4–4.5 mm wide, ovate, acute, margins entire, white to light pink or maroon on the upper one-third, outwardly flared at the tip; stamens ⅓–½ as long as the perianth, anthers ca. 1 mm long, yellow, elliptic, mucronate; styles ca. equalling the stamens, three-lobed, ovary prominently crested with 6 narrowly triangular, radially oriented processes, processes emarginate, outer margins undulate to shallowly and irregularly toothed. Seed coat black with hexagonal, minutely pustuliferous cells. Chromosome number $n = 7$ (from the type collection).

TYPE: USA, CA, Kern Co.: W. slope of Spanish Needle Peak near summit, ca. 1.2 air km s. of the Tulare-Kern-Inyo Co. line, T25S R37E S4, 2315 m, 15 Jun 1985, *Shevock 11219* (Holotype: CAS; isotypes: CPH, NY, RSA).

PARATYPES: USA, CA, Kern Co.: From the type locality, 10 Jun 1986, *McNeal and Boyd 3155* (CAS, CPH, NY, RSA, UC); e. slope of Spanish Needle Peak, 2300 m, 10 Jun 1986, *Shevock, Norris, and Bagley 11636* (CAS, CPH, RSA, MO, NY, US).

*Distribution, habitat, and phenology. Allium shevockii* occurs in soil pockets on dark colored metamorphic (chlorite-chloritoid schist) outcrops, an adjacent igneous (aplite) intrusion, and on steep colluvial talus slopes between 2200–2350 m on Spanish Needle Peak in the southern Sierra Nevada, Kern Co., California. Bulbs mainly occur along the margins of outcrops where the slope is more stable. Reproduction appears to be primarily vegetative. Few mature flowers with developing capsules have been observed.

Vegetation in the general area is an open, mixed evergreen forest. Associates in the immediate vicinity are sparse due to the steep, unstable slopes. Associated species include: *Arabis davidsonii* Greene, *Arabis* sp., *Caulanthus pilosus* S. Wats., *Cercocarpus intricatus* S. Wats., *Dudleya calcicola* Bartel & Shevock, *Epilobium canum* (Greene) Raven subsp. *latifolium* (Hook.) Raven, *Eriogonum breedlovi* (J. T. Howell) Reveal var. *shevockii* J. T. Howell, *Eriogonum nudum* Dougl. ex Benth., s.l., *Eriogonum umbellatum* Torr., s.l.,

*Eriogonum wrightii* Torr. ex Benth. subsp. *subscaposum* S. Wats., *Eriophyllum ambiguum* (Gray) Gray var. *paleaceum* (Bdg.) Ferris, *Eriophyllum confertiflorum* (DC.) Gray, s.l., *Juniperus occidentalis* Hook., *Keckiella breviflora* (Lindl.) Straw, *Leptodactylon pungens* (Torr.) Rydb. subsp. *pulchriflorum* (Brand) Mason, *Mimulus* sp., *Pellaea mucronata* (D. C. Eat.) D. C. Eat., *Pinus monophylla* Torr. & Frem., *Quercus chrysolepis* Liebm., *Scrophularia desertorum* (Munz) R. Shaw, and *Symphoricarpos parishii* Rydb.

*Allium shevockii* is yet another highly restricted endemic from the southern Sierra Nevada. Habitat with similar slope, aspect, geology, and elevation occurs along the crest south of Spanish Needle to Mt. Jenkins, a distance of 6.5 air km. Access to this area will be enhanced greatly with the completion of the Pacific Crest Trail section that is currently under construction between Spanish Needle and the Owens Peak-Mt. Jenkins saddle. Suitable habitat north of Spanish Needle toward Sawtooth Peak and south of Mt. Jenkins toward Walker Pass along the crest appears to be lacking due primarily to a change in geology. In addition to the type locality, *A. shevockii* was located in six small, adjacent canyons on the west face and two canyons on the east face of Spanish Needle. These populations are composed of several thousand individuals. Approximately 10% of the suitable habitat has been surveyed at this time. All populations are free of human disturbances and are likely to remain so due to the rugged nature of the habitat.

*Relationships. Allium shevockii* belongs to the *A. sanbornii* alliance (Saghir et al. 1966) that is characterized by taxa having a single terete leaf per scape and a prominent ovarian crest with six processes (two per lobe). *Allium shevockii* possesses several features unique in the alliance including: 1) obovate to oblanceolate perianth segments, the outer series of which are strongly reflexed to coiled in the distal half; 2) the light-lemon yellow fresh bulb coats; 3) the long filamentous secondary rhizomes that develop from the main bulb or more commonly from basal bulblets that form on short, stout primary rhizomes at the base of the main bulb. These characters make *A. shevockii* distinctive and easily recognized.

The position of *A. shevockii* within the *A. sanbornii* alliance is problematical. In its formation of basal bulblets and more or less entire crest processes, it is similar to *A. atrorubens* S. Wats. and *A. monticola* A. Davids., but otherwise appears not to be related closely to either taxon that lack the secondary, filamentous rhizomes and distinctively reflexed outer perianth segments. In stature and the three-lobed style, it resembles *A. fimbriatum* S. Wats., s.l., but it seems not to be closely related to this taxon, which lacks both basal bulblets and filamentous rhizomes and has dentate to lacinate crest

processes. *Allium shevockii* apparently has evolved a series of unique features independent of other members of the *A. sanbornii* alliance.

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Literature Cited

Saghir, A. R. B., L. K. Mann, M. Ownbey, and R. Y. Berg. 1966. Composition of volatiles in relation to taxonomy of American Alliums. Amer. J. Bot. 53:477–484.

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## ANNOUNCEMENT

New Publication

Weber, W. A., *Colorado Flora: Western Slope,* Colorado Associated Univ. Press, 1334 Grandview Ave., Box 480, Univ. Colorado, Boulder 80309, 1987, 550 pp., 107 pl., 64 color pl., $20.50. [Illustrated manual of vascular plants of the entire hydrological western slope of Colorado. Same format as *Rocky Mountain Flora,* with type faces reduced to accommodate more text. Introduction contains essays on floristic zones, pronunciation (European recommended!), common names (discouraged!), the Colorado-Altai plant geography connection, generic concepts (non-traditional!), eponymy. Keys to families, genera and species with derivations, glossary. Statements of habitat and endemic status. Families and genera alphabetical. Non-numerical index uses three-letter family acronyms. Controversial? Yes, indeed! Dedicated to Greene, Rafinesque, Rydberg, Camp, Shinners, and Löve.